

Hylebos Waterway Natural Resource Damage Settlement Proposal and Liability Allocation

The natural resource trustees conducting the natural resource damage assessment for the Commencement Bay environment consist of the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Dept. of Commerce (lead administrative trustee), the U.S. Dept. of the Interior, the Washington Dept. of Ecology (as lead state trustee, also representing the Washington Dept. of Natural Resources and Dept. of Fish and Wildlife), the Puyallup Tribe of Indians, and the Muckleshoot Indian Tribe.

Copies of the trustees' natural resource damage settlement proposal report for the Hylebos Waterway and supporting documents are available for review at two repositories:

Citizens for a Healthy Bay
917 Pacific Ave., Suite 406
Tacoma, WA 98402
Contact: Leslie Rose
Phone: 253/383-2429
Email: lrose@healthybay.org

NOAA Damage Assessment and Restoration Center NW
7600 Sand Point Way NE
Seattle, WA 98115-0070
Contact: Gail Siani
Phone: 206/526-4566
Email: Gail.E.Siani@noaa.gov

Persons wishing to review the documents are asked to phone or email in advance to make an appointment.

A copy of the report can also be downloaded at

www.darcnw.noaa.gov/hylsettl.htm

For more information contact
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Equating Natural Resource Injury Losses and Habitat Restoration Gains - Using *Habitat Equivalency Analysis* to Measure Compensatory Restoration

The Commencement Bay natural resource trustees are trying to reach settlements and achieve restoration quicker by skipping over a step in the natural resource damage assessment process. Instead of calculating the dollar value of injuries to natural resources, the trustees determine how much habitat restoration is needed to compensate for the injuries. The trustees look at the type and amount of habitat injured and the extent of the resource injuries to judge the amount of environmental harm that has occurred. Proposed restoration projects are reviewed to determine the project size and elements needed to compensate for the harm. This process of identifying the gains in restoration habitat needed to equal the losses in habitat injuries is called habitat equivalency analysis or HEA.

● Substituting Environmental Criteria for Dollar Values

HEA is essentially an accounting exercise that uses environmental criteria rather than dollars to compare the losses from contamination and the gains from restoration. The environmental criteria in effect serve as an ecological currency for assigning values to the resources injured and the restoration proposed. In defining the currency for the Hylebos Waterway the trustees considered the ways fish and wildlife use different habitats, looking at what services the habitats provide to the affected species. The ecological services provided by the habitats become the yardstick for measuring resource injury losses and habitat restoration gains.

● Selecting a Reference Standard

A common standard of reference is needed to compare different habitats that provide different ecological services. The trustees identified a reference standard by looking at the types of habitats that would be of most value to injured species. Trustee studies show that juvenile salmon, flat fish, and sediment organisms have been injured by Hylebos Waterway contamination. The studies also show that several types of birds that prey on these species are being exposed to sediment contamination at potentially harmful levels. Based on a review of study data and scientific literature, and considering the scarcity of different habitat types in the area, the trustees selected estuarine emergent marsh as the reference standard habitat against which to judge other habitats. Emergent marsh ecological services are given a value of 1.0, and other injured or restoration candidate habitats are assigned ecological service values relative to emergent marsh.

- **Considering Other Factors**

The trustees take into account harm to natural resources from other causes and other factors limiting habitat function in calculating ecological service losses from contamination and gains from restoration. Specifically the trustees reduce the ecological service values assigned to habitat areas degraded by harmful concentrations of wood waste or by shading from over-water structures. The baseline (uninjured) ecological service values for some areas are adjusted where neighboring habitats needed for an affected area to serve its optimal ecological function are not present.

- **Measuring the Effect of Contamination**

To determine the ecological service losses in contaminated areas, the trustees reviewed study data, scientific literature and regulatory standards to judge how increasing concentrations of the different Hylebos Waterway contaminants affect species using the waterway. The trustees assume that habitat contaminated to the point that it injures species using it provides less in ecological services than uncontaminated areas. The trustees assign a percentage service reduction figure to a minimum concentration (threshold) of each contaminant, and a series of increasing percentage reductions in ecological services as the level of contamination increases.

- **Mapping the Data to Calculate Ecological Service Losses**

To calculate ecological service losses from contamination, the trustees drew maps combining information on habitat values, sediment contamination and degraded habitats. The maps also show where EPA has planned sediment cleanup or natural recovery. The data from these maps are used to calculate a combined ecological service loss figure for all contaminated areas of the waterway. The size of each area affected is taken into account to produce a figure for service-acres lost each year considered.

- **Factoring in Time; Putting in All Together**

The trustees take into account each year that natural resources have been injured by contamination, beginning in 1981 and ending when the waterway has recovered after sediment cleanup or natural recovery. Ecological service losses occurring in different years are converted to a present value through discounting and compounding. Adding the discounted service acre year losses for each year in which injuries occur produces a discounted service acre-year (DSAY) loss for all contamination in all areas. The data on one contaminant led the trustees to subtract some of the DSAYs from the total loss; other DSAYs for which it appears only the City of Tacoma or the Port of Tacoma are liable were subtracted because the trustees previously settled natural resource damage claims against the City and the Port. The result is a total loss for the Hylebos Waterway of 2099.96 DSAYs.

Commenting on the Proposal

Comments will be accepted through close of business **May 16, 2002**. Comments should be in writing and addressed to:

Hylebos NRDA Settlement Proposal Comments
Attn: Ms. Gail Siani
NOAA Damage Assessment and Restoration
Center NW
7600 Sand Point Way NE
Seattle, WA 98115-0070
or by email to
Gail.E.Siani@noaa.gov

- **Calculating Restoration Credits**

HEA is used in a similar way to determine the DSAY gains that parties will be credited with from proposed restoration projects. To calculate the gains from a project, the trustees look first at the ecological services being provided by the project site in its current condition. The analysis takes into consideration the baseline adjustments described above due to the type of neighboring habitats. The trustees consider the type and size of different project elements and the time it will take for the project to mature. DSAY gains expected in the future are discounted to a present value using the same formulas used to determine losses from contamination. The result is a calculation of a DSAY gain credit figure for the project. The trustees' aim is to reach settlements that will result in restoration projects that will together produce gains of 2099.96 DSAYs to compensate for the losses from contamination.